

EXHIBIT 1

Sudershan K. Arora, Ph.D.

2005- Present	President – Novel Drug Discovery & Development Lupin Research Park (Lupin Limited) Pune
2004-2005	Global Head R&D. Sandoz GmbH (A Novartis Company) Biochemiestr, 10 6250 Kundl Austria
2000 – 2004	President – New Chemical Entity Research Lupin Research Park (Lupin Limited) Pune
1997 – 00	Vice President, New Drug Discovery Research Ranbaxy Laboratories Ltd Gurgaon
1993 – 97	Sr. Manager – R&D Biogen Inc, Cambridge, MA, USA
1987 – 93	Sr. Director – Drug Discovery & Process Research Greenwich Pharmaceutical, Fort Washington, PA, USA
1982 – 87	Post-Doc University of Illinois at Chicago, USA (Dr. J. Kagan & Dr. D.L. Venton)
1979 – 82	Manager – Process Research & New Molecules Union Carbide, Bhopal
1978 – 79	Lecturer, S.D. College, Pathankot
1977	Ph.D. Kurukshetra University (Medicinal Chemistry)

Areas of Expertise:

Drug Discovery and Development, Process Chemistry (API & new molecules) and Phytochemistry.

Major Accomplishments

- ❖ Established state-of-art Lupin R&D Centre in Pune.
- ❖ Filed 9 IND Applications (3 – USA & 6 – India)
- ❖ BPH Compound is in Phase – II clinical trials
- ❖ VLA₄ (Asthma) compound is in Phase – II clinical trials
- ❖ Amigra – Anti-migraine compound Clinical Phase II completed

- ❖ Desoris – Anti-psoriasis compound Clinical Phase II completed
- ❖ Desoside-P-Anti-psoriasis compound is in Phase-I clinical trial
- ❖ LL-3858-Sudoterb – Anti-TB compound is in Phase-I clinical trial
- ❖ Process Development of various Generic Products/New molecules in India & USA
- ❖ 37 Publications in Peer reviewed journals
- ❖ 25 US patents
- ❖ 10 India Patents
- ❖ DST-CSIR-Lupin Collaboration(IICT-HYD,NCL-PUNE, IISC-BANGALORE)
- ❖ Active Participant in NMITLI (CSIR) projects (CDRI-LUCK, NCL-PUNE, IICT-HYD)

Awards

- ❖ Honorary Professor for Life, Department of Life Sciences, Bundelkhand University, Jhansi, U.P. (February, 2001)
- ❖ Professor A.S.R. Anjaneyulu Award, awarded by Indian Chemical Society, Kolkata (December, 2002)
- ❖ S.S. Katiyar Science Award, conferred at Indian Science Congress – 2005.
- ❖ Acharya P.C. Ray Memorial at Indian Chemical Society convention at Marathwada University, Aurangabad on 24th December, 2006

Task Force Member/Research Council Member

- Examiner of Ph.D./M.Phil thesis: (1997):
 Delhi University,
 Osmania University,
 Lucknow University,
 Panjab University
 GND University, Amritsar.
 Bundelkhand University, Jhansi
 Kurukshetra University, Kurukshetra
- Chairman for “Eleventh Five Year Plan - Pharmaceutical, Health Care and Drug Sector under R&D Planning Division, Council of Scientific & Industrial Research, New Delhi.
- Expert member of FICCI for INDO-US joint industry-working group on Biotechnology.
- Member for Selection Committee for NMITLI, CSIR, New Delhi
- Expert for evaluation of Council of Scientific & Industrial Research, Schemes - (1997 - present)
- Member – Executive Council, Bundelkhand University, Jhansi, Uttar Pradesh
- Member – Board of studies – Guru Gobind Singh Indrapastha

Ph.D. Guide

The following students have been awarded Ph.D. under my guidance/supervision:

1. Nawal Kishore, Ph.D. Chemistry
2. Ram Shankar Upadhayaya, Ph.D. Chemistry
3. Himadri Sen, Ph.D. Biological Science
4. Sharad Sharma, Ph.D. Biological Science
5. Rajan Goel, Ph.D. Biological Science
6. Jyoti Idnani, Ph.D. Pharmaceuticals

PATENTS:

1. Sudershan K. Arora, Neelima Sinha, Prathap Nair, Ajay Tilekar, Nabendu Saha, Talkha Khna, Reeba Vikramadithyan, and Rajesh Gupta (Lupin Limited) - Provisional Application filed for Indian Patent "Novel Anti-Diabetic Compounds".
2. Sudershan K. Arora, Neelima Sinha, Navnath Karche, Prasad Dixit, Karan Singh, Rajan Goel (Lupin Limited) - Provisional Application filed for Indian Patent "Novel Anti-Diabetic Compounds".
3. Sudershan K. Arora, et.al. Muscarinic Receptor Antagonists (Ranbaxy Lab. Ltd), International Application No. PCT/IB2005/003459, Dated 18th Nov. 2005 (RLL-625WO).
4. Sudershan K Arora et. al. (Lupin Limited) A Novel Anti-mycobacterial Pharmaceutical composition, US Patent Application # 10/844, 922 March, 2004.
5. Sudershan K. Arora et. el (Lupin Limited). A purified arabinogalactan-protein (AGP) composition useful in the treatment of psoriasis and other disorders" US Patent Application # US/10/931, 814 September, 2004.
6. Sudershan K. Arora et. el (Lupin Limited)., Herbal Composition for Treating various disorders including Psoriasis, filed a PCT application (US), application # US 10/340,195, January, 2003.
7. Sudershan K. arora et. al (Lupin Limited), A synergistic Aqueous Pharmaceutical Composition for Prophylactic Treatment of Migraine, filed a PCT application # PCT/IN03/00289 filed on August 27, 2003.
8. Sudershan K. Arora, Neelima Sinha, Rakesh Sinha (Lupin Ltd.) "Novel Antimycobacterial Compounds" filed a PCT application in August, 2002.
9. Sudershan K. Arora, V. K. Patil, Rakesh Sinha (Lupin Limited) "Novel 3-and/or 4-(4-substituted piperiziny)alkyl pyrroles useful as Antitubercular Agents" filed a PCT application in August, 2002.
10. Sudershan K. Arora, V. K. Patil and Ajay Shankar (Lupin Ltd) " Novel Atibacterial Compounds" filed a PCT application in August, 2002.
11. Sudershan K. Arora, S. Narendar, Vandita Srivastava and D.B. Saraf (Lupin Limited) "Herbal Medication for the treatment of Psoriasis" filed in India on 8th day of January, 2002.
12. Anita Mehta, Sudershan K. Arora, et.al. (Ranbaxy Laboratories Ltd) "Novel Phenyl Oxazolidinone having antimicrobial properties" filed in India on July 17, 2000.

13. Ashwani Kumar Verma, Sudershan K. Arora, Jasbir Singh Arora, Ashok Rattan (Ranbaxy Laboratories Ltd) "Syntheses of New Azole Compounds As Therapeutic Agents for Fungal Infections" filed in USA on 23rd May, 2000.
14. Ashwani Kumar Verma, Sudershan K. Arora, Jasbir Singh Arora, Ashok Rattan (Ranbaxy Laboratories Ltd) "Process for the Syntheses of New Azole Compounds As Therapeutic Agents for Fungal Infections" filed in India on 7 th March, 2000.
15. Sudershan K. Arora, Nawal Kishore, Jang Bahadur Gupta, Vishwas D. Joshi: (Ranbaxy Laboratories Ltd) "Derivatives of Monosaccharides as Novel Cell Adhesion Inhibitors" filed in US on March 25, 1999; WO 00/42054.
16. Sudershan K. Arora; Nawal Kishore, Jang Bahadur Gupta, Vishwas D.Joshi : (Ranbaxy Laboratories Ltd) "A Process for the Synthesis of Derivatives of Monosaccharides as Novel Cell Adhesion Inhibitors" filed in India on January 15, 1999.
17. Sudershan K. Arora, Madan Pal Tanwar, Jang Bahadur Gupta, Geeta Sharma: (Ranbaxy Laboratories Ltd) "Derivatives of Monosaccharides as Novel Cell Adhesion Inhibitors" filed in US on January 12, 1999; WO 00/42053.
18. Sudershan K. Arora, Madan Pal Tanwar, Jang Bahadur Gupta, Geeta Sharma: (Ranbaxy Laboratories Ltd) "A Process for the Synthesis of Derivatives of Monosaccharides as Novel Cell Adhesion Inhibitors" filed in India on October 22, 1998.
19. Sudershan K. Arora et.al (Dexter Chemicals (1) Pvt. Limited): Disubstituted and trisubstituted derivatives of 2,3:4,6-DI-O-isopropylidene (x-L-Xylo-2-Hexaiofuranosonic Acid having Anti-Cancer, Anti-inflammatory and Anti-Proliferative Activity (US Patent # 5, 637,570 June, 1997)
20. S.K. Arora (Medicarb Inc.): Derivatives of Pentoses Having Anti-Cancer, Anti-Inflammatory, and Anti-proliferative Activity. (U.S. Patent submitted January, 1993).
21. S.K. Arora (Medicarb Inc.): Disubstituted and Deoxy Disubstituted Derivatives of (x-D-Lyxofuranosides having Anti-Cancer, Anti-inflammatory and Anti -proliferative Activity: U.S. Patent # 5,360,793 (Nov. 1994).
22. S.K. Arora (Medicarb Inc.): Disubstituted and Deoxy Disubstituted Derivatives of a-D-Lyxofurabosides Having Anti-Cancer, Anti-inflammatory and Anti-proliferative Activity. (U.S.

Patent # 5,344,923 (Sept., 1994).

23. S.K. Arora, D. Thomson, Akhtar Nayeem: Anti -proliferative and Antiinflammatory Compounds: 5- or 6-D.eoxy hexose monosaccharides having a saturated nitrogen containing hetetrocycles at the 5- or 6-position: US Patent # 5,360,792 (Nov., 1994).
24. S.K. Arora, R.L. Whistler and A.V. Thomas: M6nosaccharides having AntiProliferation and Anti - Inflammatory Activity, composition and uses thereof. U.S. Patent# 5,298,494 (March, 1994).
25. S.K. Arora: Selective Hydrolysis of Diacetal blocked cyclic hexoses using 30% perchloric acid. (U.S. Patent submitted February 1990).
26. S.K. Arora and B. Ronsen: 3,5,6-Substituted Derivatives of 1,2-0-Isopropylidene- alpha, D-Glucofurnaoase, and intermediates for preparing these derivatives. U.S. Patent # 5,010,058 April, 1991.
27. B. Ronsen, S.K. Arora and A.V. Thomas: Derivatives of alpha, DGlucufuranose and intermediates for preparing these derivatives. U.S. Patent # 4, 996, 195 February, 1991.
28. S.K. Arora, B. Ronsen: Solvent free synthesis of ethereally substituted blocked nonosaccharides and the selective hydrolysis thereof, U.S. Patent 5,344,924 (Sep., 1994).
29. J.A. Durden, T.D. Silva, S.K. Arora, CX Rao and R. Grover (Union 8Carbide Corporation, U.S.A.). N-(Alpha-haloacyl)-N-hydrocarbonyI carbomyl halides and process of preparation. U.S. Patent # 4,637, 901 (Jan. 20, 1987).

PUBLICATIONS:

1. "Preclinical Pharmacokinetics and bioavailability of Noscapine, a Tubulin-Binding Anticancer Agent" published in Cancer Chemotherapy and Pharmacology.
2. PP Dixit, VJ Patil, S Jain, RK Sinha, SK Arora, N Sinha. Synthesis of 1-[3-(4-benzotriazol-1/2-yl-3-fluoro-phenyl)-2-oxo-oxazolidin-5-ylmethyl]-3-substitued-thiourea derivatives as antituberculosis agents. *European Journal of Medicinal Chemistry* 2006, 41, 423-428.
3. Biswajit Das, Sonali Rudra, Ajay Yadav, Abhijit Ray, S.K. Arora, et.al. Synthesis and SAR of novel oxazolidinones: Discovery of Ranbezolid, *Bioorganic & Medicinal Chemistry Letters* 2005, 15, 4261-4261.
4. Ahmed Kamal, K. Srinivasa Reddy, S. Kaleem Ahemd, M. Naseer, A. Khan, S.K. Arora, Anti-tubercular agents. Part 3. Benzothiadiazine as a novel scaffold for anti-Mycobacterium activity, *Bioorganic & Medicinal Chemistry*, 2006, 14, 650-658.
5. GH Jana, S Jain, SK Arora, N Sinha. Synthesis of some diguanidino 1-methyl-2,5-diaryl-1H-pyrroles as antifungal agents. *Bioorganic & Medicinal Chemistry Letters* 2005, 15, 3592-3595.
6. PP Dixit, PS Nair, VJ Patil, S Jain, SK Arora, N Sinha. Synthesis and antibacterial activity of novel (un)substituted benzotriazolyl oxazolidinone derivatives. *Bioorganic & Medicinal Chemistry Letters* 2005, 15, 3002-3005.
7. A Kamal, AA Shaik, RK Sinha, J S Yadav, SK Arora. Antitubercular agents. Part 2: New thiolactomycin analogues active against Mycobacterium tuberculosis. *Bioorganic & Medicinal Chemistry Letters* 2005, 15, 1927-1929.
8. A Kamal, AH Babu, AV Ramana, RK Sinha, JS Yadav, SK Arora. Antitubercular agents. Part 1: Synthesis of phthalimido- and naphthalimido-linked phenazines as new prototype antitubercular agents. *Bioorganic & Medicinal Chemistry Letters* 2005, 15, 1923-1926.

9. N Sinha, S Jain, A Tilekar, RS Upadhayaya, N Kishore, GH Jana, SK Arora. Synthesis of isonicotinic acid *N'*-arylidene-*N*-[2-oxo-2-(4-aryl-piperazin-1-yl)-ethyl]-hydrazides as antituberculosis agents. *Bioorganic & Medicinal Chemistry Letters* **2005**, *15*, 1573-1576.
10. N Kishore, S Jain, N Sinha, RS Upadhayaya, R Chandra, SK Arora. Synthesis of some new disubstituted- and deoxytrisubstituted- α -D-allofuranoses. *ARKIVOC* **2005**, (iii), 156-164.
11. N Sinha, S Jain, A Tilekar, RS Upadhayaya, N Kishore, RK Sinha, SK Arora. Synthesis and antimycobacterial activity of *N,N'*-disubstituted isonicotinohydrazide derivatives. *ARKIVOC* **2005**, (ii), 9-19.
12. Arulmozhi DK, Veeranjanyulu A, Bodhankar SL, Arora SK. Effect of *Sapindus trifoliatus* on hyperalgesic *in vivo* migraine models. *Braz J Med Biol Res.* 2005 Mar;38(3):469-75. Epub 2005 Mar 8.
13. Arulmozhi DK, Veeranjanyulu A, Bodhankar SL, Arora SK. Pharmacological studies of the aqueous extract of *Sapindus trifoliatus* on central nervous system: possible antimigraine mechanisms. *J Ethnopharmacol.* 2005 Mar 21;97(3):491-6.
14. Arulmozhi DK, Sridhar N, Bodhankar SL, Veeranjanyulu A, Arora SK.. *In vitro* pharmacological investigations of *Sapindus trifoliatus* in various migraine targets. *J Ethnopharmacol.* 2004 Dec;95(2-3):239-45.
15. Arulmozhi DK, Veeranjanyulu A, Bodhankar SL, Arora SK.. Investigations into the antinociceptive activity of *Sapindus trifoliatus* in various pain models. *J Pharm Pharmacol.* 2004 May;56(5):655-61.
16. Arulmozhi DK, Veeranjanyulu A, Bodhankar SL, Arora SK. Investigations of *Sapindus trifoliatus* in dopaminergic and serotonergic systems: Putative antimigraine mechanisms. *Indian Journal of Pharmacology*, 2005, Volume 37, Issue 2.
17. Arulmozhi DK, Veeranjanyulu A, Bodhankar SL, Arora SK. Pharmacological investigations of *Sapindus trifoliatus* in various *in vitro* and *in vivo* models of inflammation. *Indian Journal of Pharmacology*, 2005, Volume 37, Issue 2

- 18.N Kishore, N Sinha, S Jain, RS Upadhayaya, R Chandra, SK Arora.
Synthesis of disubstituted- and deoxydisubstituted- derivatives of \square -D-xylofuranose as anticancer agents. *ARKIVOC* **2005**, (i), 65-74.
- 19.RS Upadhayaya, S Jain, N Sinha, N Kishore, R Chandra, SK Arora.
Synthesis of Novel Substituted Tetrazoles having Antifungal Activity.
European Journal of Medicinal Chemistry **2004**, 39, 579-592.
- 20.RS Upadhayaya, N Sinha, S Jain, N Kishore, R Chandra, SK Arora.
Optically Active Antifungal Azoies: Synthesis and Antifungal Activity of (2R,3S)-2-(2,4-Difluorophenyl)-3-(5-{2-[4-aryl-piperazin-1-yl]-ethyl}-tetrazol-2-yl/1-yl)-1-[1,2,4]-triazol-1-yl-butan-2-ol. *Bioorganic & Medicinal Chemistry* **2004**, 12, 2225-2238.
- 21.H. B. Mereyala, R. R. Gadikota, M. Joe, S. K. Arora, S. G. Dastidar and S.A.Agarwal, Synthesis and Antitumor Activity of Goniofufurone Analogues, *Bioorganic & Medicinal Chemistr* 1999, 7, 2095-2103.
- 22.S.M. Sondhi, N. Singhal, R.P. Verma, S.K. Arora, R. Shukla and R.Raghubir. Synthesis, Antiinflammatory and Anticancer Activity Evaluation of Some Condensed Pyrimidines, *Monatshefte fur Chemie Chemical Monthl* 192/99.
- 23.S.M. Sondhi, N.Singhal, R. P. Verma and S.K. Arora. Synthesis of Hemin and Porphyrin Derivatives and their Evaluation for Anticancer Activity, accepted by Indian J. Chemist.
- 24.E.J. Kattelman, S.K. Arora, C.T. Lim, D. L. Venton and G.C. LeBreton. A Photo-affinity label for the thromboxane A2/prostaglandin H2 receptor in human blood platelets. *FEBS Letters*, 213, 179, 1987.
- 25.S.K. Arora, E.J. Kattelman, C.T. Lim, G.C. Le Breton and D.L. Venton. Preparation and Biological Evaluation of a potential photoaffinity Label for prostaglandin-H2/Thromboxane-A2 Receptor. *J. Med. Chem.*, 30, 918, 1987.
- 26.S.K.Arora, B.S. Cho, V.K. Chadha, A.J. Bauer, G.C. LeBreton and D.L. Vanton. 3-[(2)-2-t-Butoxyethenyl]-4-hydroxy-2 (5H)-furanone, and interesting by-product obtained from reaction of 4-t-butoxy-2-butonoate with Alkoxide anion of Methyl Glycolate. *J.Het. Chem.*, 23, 963,1986.
- 27.S. K. Arora, B.S. Cho and D.L. Venton. A single step preparation of Dopamine-4-0-sulfate. *Synthesis*, 884, 1985.
- 28.J. Kagan, J. Jaworski, K.T. Weilandt, S.N. Dhawan, G. Chan, 1. Prakash and S.K. Arora. Oxygen requirement for near UV Mediated Cytotoxicity of phenyl-heptatriyne to Escherichia coli. *Phytochem. and*

- Phytobio., 39, 465-467, 1984.
- 29.J. Kagan, S.K. Arora, M.Brygie, S.N. Dhawan, K. Reid, S.P.Singh and L.Tow. Reactions of $Pc15$, with 2-Acetylthiophene and acetophenone. J. Org. Chem., 48, 703-706, 1983.
 - 30.J. Kagan, G. Chan, S. N. Dhawan and S. K. Arora. The effect of UVA on the toxicity of Natural Products; Studies with 2-Phenyl-5-(l-propyl)thiophene Coumarine and the Eggs of *Dorsophila melanogaster*. J. Nat. Products., 46, 646-650, 1983.
 - 31.J. Kagan, S. K. Arora, I.Prakash and A. Ustinol. The synthesis of 2,2':5',3"Terthiophene. Heterocycles, 20, 1341-1345, 1983.
 - 32.J. Kagan, S. K. Arora and A. Ustinol. The synthesis of 2,2':5',2"-Terthiophene-5-carboxylic acid and 2,2':5',2"-terthiophene-5,5"-dicarboxylic acid. J. Org. Chem., 48, 4076-4078, 1983.
 - 33.J. Kagan, and S.K.Arora. The synthesis of Alpha-Thiophene Oligomers via 1,3-Butadiynes. J.Org. Chem., 48, 4317-4320, 1983.
 - 34.J. Kagan and S. K. Arora. The synthesis of alpha-Thiophene Oligomers via Organoboranes. Tett. Let. 24, 4043-4046, 1983.
 - 35.J. Kagan and S.K. Arora. 2,5, Di(2'-thienyl) furan and an improved synthesis of Alpha-terthienyl. Heterocycles, 20 (10), 1941-1943, 1983.
 - 36.J. Kagan and S.K. Arora. The synthesis of Alpha-Thiophene Oligomers by Oxidative coupling of 2-Lithothiophenes. Heterocycles, 20(10), 1937-1940, 1983.
 - 37.J. Kagan and S. K. Arora. A New and General Approach to the Syntesis of monohalothiophene via Lithiation.
 - 38.R.S. Sandhu, B. Singh and S.K. Arora. Polarographic study of some 6-(Aryl) imidazo [2,1-b] thiazole-3-acetic acids and 6-(Aryl)imidazo [2,1-b] thiazole-3-acetates. J. Indian Chem. Soc., 58, 748-749, 1981.
 - 39.S. N. Sawhney, S. P. Singh and S.K. Arora. Synthesis and anti-inflammatory activity of some 6-Alkyl or Arylimidazo [2,1-b] thiazole-3-acetic acids. Indian J. Chem., 168, 523, 1978.
 - 40.S. N. Sawhney, O.P. Bansal and S.K. Arora. Synthesis and anti-inflammatory Activity of 2-Amino and 2-Alkylamino-6benzothiazole acetic Acids, (2'-Benzothiazolamino)- 4 - (4'-substituted-2-thiazolylamino)- and 4',4'-substituted-3'-alkyl-4-thiazoline-2'-imino)-phenylacetic acids. Indian J. Chem., 1613, 605, 1978.
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Synthesis and Anti-inflammatory Activity of some N- (4-substituted -2-thiazolyl) -p(2-substituted-4-thiazolyl) anilines. Indian J. Chem., 168, 521, 1978.

42.S. N. Sawhney, S. P. Singh and S.K. Arora. Thiazole Derivatives: Part 11, Synthesis of some 2,4'-and 4,4'-Bithiazolyl Derivatives as potential Anti-inflammatory Agents. Indian J. Chem., 1513, 727, 1977.

43.S. N. Sawhney and S. K. Arora. Thiazole Derivatives : Part 1, Synthesis of some 2'-alkyl or aryl-2-aryl-4methyl-4', 5-bithiazolyls and 2'-Amino or substituted Amino-2-aryl-4-methyl-4', 5-bithiazolyls. Indian J. Chem., 1413, 552, 1976.

44.S.K. Arora, K. C. Huo and R.M. Moriarty. Hydroxylation of a Ketone using O-Iodosyl Benzoic Acid Hydroxyacetophenone via the alpha hydroxydimethylacetal. Org. Synthesis, 64, 138-142, 1985.